Chemistry 102

Catalog Description:
Chem 102. General Chemistry II. 3-3-0 Prerequisite: Chem 101. A continuation of Chem 101. A terminal course for students who do not plan to enroll in additional chemistry courses.

Prerequisite/corequisite: Chemistry 101.

Required Textbook and other Materials:
Introductory Chemistry, A Foundation,6th, Zumdahl & Decoste
Required Supplementary Readings: Extensive use of the Internet for group projects and papers.

Goals of Course:
To provide students with an understanding of the general principles of chemistry as these principles relate to the political, social and economic impact resulting from the manufacture; use and misuse of chemical compounds. Students will become scientifically literate and better able to understand and assess issues involving the chemical industry.
There will be demonstrations, lectures, problem solving, and class discussion during class. Students will be given opportunities to develop problem solving and critical thinking skills.

This course is to contribute to the student's preparation to be a rational, skilled and educated member of this world community.

Student Outcome Objectives:

1. To appreciate the role that chemistry plays in everyday life.
2. To evaluate environmental issues in light of the chemistry involved with those issues.
3. To make informed judgments on crucial issues that are of current concern worldwide while providing a basic understanding of chemical principles and practices.
4. To know that humans live in a chemical environment and that chemistry affects every aspect of our lives.
5. To grasp the notion of interdependency and to see that without some understanding of chemistry, it is impossible to fully understand environmental issues such as ozone depletion, global warming, air and water pollution, and the hazards of toxic materials.

6. To integrate new chemical principles with what we already know.

Course Content:
This is a tentative schedule and subject to change at the discretion of the instructor.

Chapter 10: Energy
Chapter 11: Modern Atomic Theory
Chapter 12: Chemical Bonding
Chapter 13: Gases
Test 1
Chapter 14: Liquids and Solids
Chapter 15: Solutions
Chapter 16: Acids and Bases
Chapter 17: Equilibrium
Test 2
Chapter 18: oxidation-Reduction reactions
Chapter 19: Radioactive and Nuclear Energy
Chapter 20: Organic Chemistry
Chapter 21: Biochemistry
Test 3

Course Requirements:

- Three exams will be given during the semester. (100 points each)

- One group paper including references with a power point presentation to the class on an environmental topic selected by the group and approved by the instructor. (200 points)

- Homework questions assigned from the text (100 points)

Group Power point Presentations will begin two weeks after the topics have been selected. One or two presentations will be given at each class. These presentations should take about 10 minutes.

At the end of each chapter there is a set of Exercises, the answers to some of which appear in the text. I have found that the best way for any of us to understand chemical concepts is to see demonstrations, work problems, and to think about applications of the concepts. Therefore, it is important that you be able to work the end of the chapter exercises for each chapter. To help you progress through this course, do the following:

1. Read the material before class.
2. Bring you text to class-illustrations in the book will be helpful during the lecture/discussion.
3. Keep abreast of current events. Read the newspaper, TV news, etc.

Homework: We will conduct the class using a lecture/discussion format to take advantage of the expertise and wealth of experiences of class members. To optimize everyone's learning in the course, each of you must actively participate in our discussions. Therefore, it will be important for you to be prepared for each class. The best

preparation you can make is to read the assigned material before we discuss it in class. Depending upon your individual backgrounds, the material may seem unclear upon first reading, but at least you will have had a chance to begin thinking about the subject at hand and you will be prepared to increase your understanding of the topic when we tackle it in class.

Methods of Evaluation:

• Total points for the course: 600.
• The grade is based on a ten point grading scale.
• 90-100 %=A, 80-89%=B, 70-79%=C, 60-69%=D, and below 60%=F
Make-Up policy: Work should be made up within two class periods after returning to school with an excused absence.